CODEL
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Tunnel Product Catalogue

Complete tunnel monitoring solutions

Our comprehensive tunnel monitoring solutions are specifically designed to ensure that gases, visibility and air flow within tunnels can be accurately monitored.

TunnelTech

ISO 9001:2015 Quality Certification

ISO 14001:2015 Environmental Certification

Monitoring Solutions

www.codel.co.uk

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Our range of monitors provide all the essential measurements necessary to monitor and control the tunnel atmosphere.

Due to the nature of tunnels, pollution from vehicles, Carbon Monoxide, Nitric Oxide and Nitrogen Dioxide and fine particles, can cause occupants in vehicles a range of respiratory problems especially Nitrogen Dioxide which is very toxic. Fine particles can gather on the lungs but, if they are gathered in dense concentrations, they can reduce visibility considerably producing a significant driving hazard. Road tunnels present operators and regulators with a number of safety issues due to their enclosed nature.

One of the key issues is ventilation as road tunnels contain a number of toxic gases as well fine particulate which are emitted from the tail pipes of vehicles.

Operating ventilation systems is a major cost item to tunnel operators and accurate and reliable tunnel atmosphere monitors only trigger systems when they are needed to clear pollution.

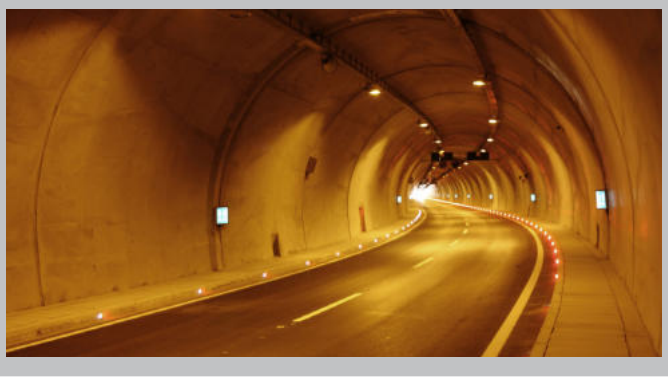
The main pollutants monitored in road tunnels are:
a) Carbon Monoxide
b) Nitric Oxide
c) Nitrogen Dioxide
d) Visibility monitored as K (extinction coefficient)
e) Flow is also monitored to control air flow
f) Light Monitors

Sources Of Pollution in Road Tunnels

Particulates

Dust particles suspended in the air can remain in suspension for a long-time reducing visibility.

- Caused by incomplete ignition of fuel.
- Very harmful to human respiratory system.
- Significant reduction in visibility for motorists.



Gaseous Emissions

Typical gases found in the atmosphere of road tunnels.

CO (carbon monoxide)
- Caused by incomplete combustion of gasoline engines.
- >100ppm is harmful, >4000ppm can be fatal.

NO (nitric oxide) & NO_2 (nitrogen dioxide)
- Emitted by all engine types.
- All oxides are toxic.
- NO_2 is highly toxic, >1ppm can be harmful to healthy adults, >0.1ppm for asthma sufferers.

Ventilation Control & Efficiency

Ventilation control limits the presence of pollutants to safe operating limits typically stated by local or government authorities.

By measuring the CO, NO and NO_2 levels, tunnel operators can use real time data to control tunnel ventilation systems to ensure safe operating limits are met. This can be easily achieved using CODEL tunnel sensors.

In addition, by using CODEL monitors for air flow velocity and direction, tunnel operators can maximise the efficiency of ventilation systems. Feedback on these parameters can help to reduce jet-fan operating time and therefore operating costs.

TunnelTech 100 Series monitors are an essential part of any road or rail tunnel safety system ensuring the tunnel ventilation system provides sufficient clean air for drivers to clearly see the road ahead.

Product Variants

- TunnelTech 101 - Visibility Monitor
- TunnelTech 102 - Cold Smoke Monitor

The TunnelTech 101 Visibility Monitor, monitors the visibility within the tunnel, used in combination with other TunnelTech 101 Vis monitors, the operator can quickly detect the focus of the fire as it is also equipped with a PT100 temperature sensor to accurately measure ambient air temperature in a range of -15 to 105˚C.

The TunnelTech 102 Cold Smoke Monitor, monitors fog in a different range to standard visibility, many tunnel operators like to differentiate between "visibility" and "fog"

- **Rugged, corrosion resistant construction**
- **Minimal maintenance requirements**
- **Class leading Accuracy, Repeatability and Resolution**
- **RS 485 (Modbus) Output**
- **Continuous measurement of Visibility in road and rail tunnels**

Measurement	Visibility/Cold smoke & temperature
Units	K factor(m^{-1})
Measurement Technique	Transmissometry
Measurement Range (Typical)	0 - 0.015m^{-1} (TunnelTech 101) 0.020 - 0.070m^{-1} (TunnelTech 102)
Accuracy	+/- 0.0002 m^{-1}
Resolution	0.0001 m^{-1}
Response Time	From 10 seconds to 2 minutes
Ambient Temperature Range	-20°C to +50°C
Temperature Sensor	-15°C to +105°C
Power Supply	24V DC
Construction	Stainless Steel 316L
Analogue outputs	2 x 4-20mA isolated current output, 500Ω maximum load. Fully configurable.
Relay Output	1 x volt-free SPCO contacts, 50V, 1A maximum load, configurable as alarm contacts.

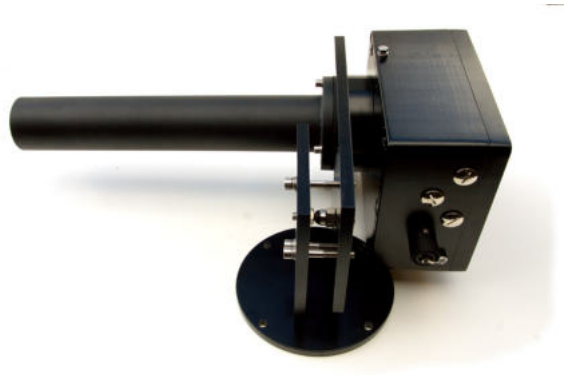
The TunnelTech 200 Air Quality Monitors use IR open path technology for the measurement of CO, NO and high intensity LED for Visibility.

Product Variants

- TunnelTech 201 - CO, NO, Vis
- TunnelTech 202 - CO, Vis
- TunnelTech 203 - CO, NO
- TunnelTech 204 - Vis Only

The TunnelTech 200 analysers uses well proven infra-red techniques to determine CO and NO concentrations and optical attenuation to monitor visibility levels. As there is only one moving part, reliability levels are very high and maintenance requirements are extremely low.

The sight tubes have been designed to ensure that airborne dust and contaminants do not reach the optical windows ensuring an accurate measurement is maintained.



- **Minimal maintenance requirements**
- **Designed to withstand the harshest of tunnel environments**
- **Continuous measurement of CO, NO and Visibility in road and rail tunnels**
- **Low cost of ownership**
- **Auto zero facility to componsate for long term drift movement**

Gas Species Options	CO, NO & Visibility (Single or multi-gas measurements available)		
Measurement units	ppm for CO & NO, m^{-1} or m for Visibility		
Path Length	3m (6m folded beam)		
Calibration	Automatic zero calibration - manual span check		
	CO	**NO**	**Visibility**
Measurement Technique	Infrared Gas Cell	Infrared Gas Cell	Optical Transmissivity
Measurement Range (typical)	0 - 100ppm	0 - 30ppm	0 - 0.015 m^{-1}
Accuracy	+/- 1ppm or 2% of span	+/- 2ppm or 2% span	Vis +/- 0.0002 m^{-1}
Resolution	1ppm	1ppm	0.0001 m^{-1}
Response Time	2 minutes	2 minutes	Vis 10s - 2min Selectable
Ambient Temperature	-20°C to +50°C		
Power supply	24V DC		
Construction	Aluminium housing, stainless steel 316L brackets, sealed to IP66 (AQM & PSU)		
Analogue Outputs	3 x 4-20mA current outputs as standard, isolated, 500Ω maximum load, fully configurable		
Relay Outputs	3 x volt-free SPCO contacts, 50V, 1A max, configurable as alarm contacts		

The TunnelTech 305 Air Flow Monitor is CODEL's industry proven single-point air flow monitor.

Product Variants

- TunnelTech 305 – Single-point airflow & tempreture

The TunnelTech 305 monitors the air flow measurement as well as the direction of flow and temperature inside the tunnel. It uses ultrasonic technology to ensure high accuracy and having no moving parts, reliability levels are very high and maintenance requirements are very low.

The sensor is constructed using stainless steel for ultimate protection against the harsh environments found in tunnels.

Fully configurable analogue and alarm outputs are provided. An RS485 link can be utilised to deliver data via MODBUS protocol to a SCADA system located in the tunnel control centre.

- **Single point ultrasonic measurement technology**
- **Uninterrupted by traffic flow and sound reflections**
- **Integral temperature measurement**
- **Stainless steel construction**
- **Designed to withstand the harshest of tunnel environments**

Measurement	Air flow, direction and temperature	
	Flow	**Temperature**
Measurement Units	m/s (Meters per Second)	°C (Degrees Celsius)
Measurement Technique	Ultrasonic Transit Time	PT100
Measurement Range (typical)	-50 to +50 m/s	-20°C to +65°C
Accuracy	±0.1 m/s	±0.1 °C
Response Time	Minimum of 1 seconds	Minimum of 1 seconds
Resolution	0.01 m/s	0.01 °C
Operating Temperature	-20°C to +65°C	
Power Supply	9 to 36V DC, 1% pk-pk, 20 MHz bandwidth (3VA Max) from separate power supply	
Construction	Stainless steel 316L, IP69K rated	
Flow Analogue Outputs	1 x 4-20mA current output, 400Ω max load, typical range 0 to 20m/sec - Configurable	
Temp. Analogue Outputs	1 x 4-20mA current output, 400Ω max load, typical range -25°C to +50°C - Configurable	

Single Cell gas analyser in a compact tunnel monitor. Uses the latest Electrochemical Cell Technology for the measurement of CO, NO, NO_2 or SO_2.

Product Variants

- TunnelTech 401 - CO
- TunnelTech 402 - NO
- TunnelTech 403 - NO_2
- TunnelTech 404 - SO_2

The TunnelTech 400 analyser electrochemical cell technology determines CO, NO NO_2, or SO_2 concentrations. With no moving parts, reliability levels are extremely high and maintenance requirements are very low.

Designed for its accuracy and ease of use the TunnelTech 400 single cell gas analyser is the perfect replacement for existing current single cell analysers. Its adaptable fitting feature allows the analyser to replace any type of existing single cell analyser with an easy installation process requiring minimal wiring.

- **Easy installation with minimal wiring required**
- **Advanced electrochemical cell technology**
- **Single species gas analyser**
- **Fully configurable 4-20mA**
- **Adaptable fitting feature allows for Quick & easy EC cell replacement**

Measurement	Single CO, NO, NO_2 & SO_2			
Measurement units	ppm for CO, NO, NO_2, SO_2			
	CO	**NO**	**NO_2**	**SO_2**
Measurement Technique	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell
Measurement Range (typical)	0 to 300 ppm	0 to 30 ppm	0 to 5 ppm	0 to 20 ppm
Accuracy	0.5 ppm	0.5 ppm	0.1 ppm	0.5 ppm
Resolution	0.1 ppm	0.1 ppm	0.001 ppm	0.1 ppm
Response Time	30 seconds	30 seconds	30 seconds	30 seconds
Detection Limit	0.5 ppm	0.5 ppm	0.1 ppm	0.5 ppm
Zero Drift	<+/- 100 ppb	<+/- 50 ppb	<+/- 20 ppb	<+/- 20 ppb
Measurement Drift	< 10% Per Year	< 20% Per Year	< 20% Per Year	< 15% Per Year
Power supply	24V DC			
Ambient Conditions	-20°C to +60°C			
Construction	ABS Plastic or Stainless steel 316L, IP69K			
Analogue Outputs	2 wires mA outputs (Passive) 4-20mA 500Ω load max, non isolated 4 wires mA outputs (Active) 4-20mA 500Ω load max, non isolated			

Uses the latest Electrochemical Cell Technology for the measurement of CO, NO and NO_2

Product Variants

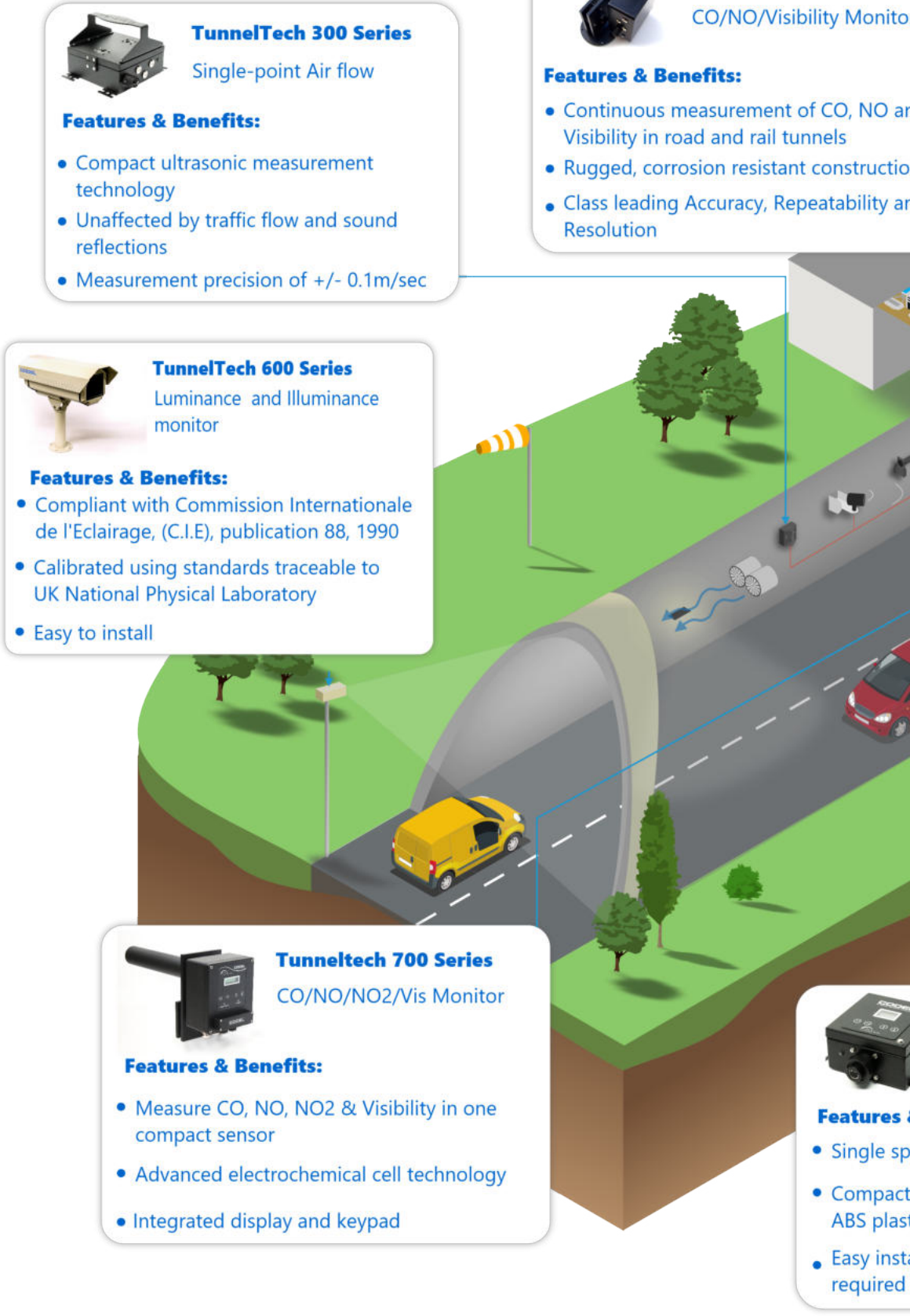
- TunnelTech 501 - CO, NO, NO_2
- TunnelTech 502 - CO, NO
- TunnelTech 503 - CO
- TunnelTech 504 - NO
- TunnelTech 505 - NO_2
- TunnelTech 506 - CO, NO_2
- TunnelTech 507 - NO, NO_2

The TunnelTech 500 Series analyser uses electrochemical cell technology to determine CO, NO & NO_2 concentrations. As with the 400 Series there are no moving parts, reliability levels are very high and maintenance requirements are low.

The TunnelTech 500 Series can monitor up to three pollutant gasses in one compact unit dramatically reducing the installation costs of single species units.

- **Built in display**
- **Minimal maintenance requirements**
- **Advanced electrochemical cell technology**
- **Measure CO, NO & NO_2 in one compact monitor**
- **Designed to withstand the harshest of tunnel environments**

Measurement Options	CO, NO & NO_2 (Single or multi-gas measurements available)		
Measurement units	ppm for CO & NO, ppb for NO_2		
Calibration	Automatic zero calibration - manual span check		
	CO	**NO**	**NO_2**
Measurement Technique	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell
Measurement Range (typical)	0 - 300 ppm	0 - 30 ppm	1000 to 5000ppb
Accuracy	± 2ppm	± 2ppm	± 100ppb
Resolution	< 0.1ppm	< 0.1ppm	100 ppb
Response Time	30 seconds	30 seconds	30 seconds
Detection Limit	< 2 ppm	< 2 ppm	10 ppb
Zero Drift	< 1 ppm per month	< 1 ppm per month	< 0.05 ppm per month
Power supply	24V DC, 30 VA from separate power supply		
Ambient Conditions	-20°C to +55°C		
Construction	Epoxy Coated Aluminium / optional Stainless Steel 316L, IP69K		
Analogue Outputs	2 x 4-20mA current outputs as standard, fully configurable		
Relay Outputs	2 or 4 x volt-free SPCO contacts, fully configurable		



TunnelTech 300 Series

Single-point Air flow

Features & Benefits:

- Compact ultrasonic measurement technology
- Unaffected by traffic flow and sound reflections
- Measurement precision of +/- 0.1m/sec

TunnelTech 200 Series

CO/NO/Visibility Monito

Features & Benefits:

- Continuous measurement of CO, NO ar Visibility in road and rail tunnels
- Rugged, corrosion resistant constructio
- Class leading Accuracy, Repeatability ar Resolution

TunnelTech 600 Series

Luminance and Illuminance monitor

Features & Benefits:

- Compliant with Commission Internationale de l'Eclairage, (C.I.E), publication 88, 1990
- Calibrated using standards traceable to UK National Physical Laboratory
- Easy to install

Tunneltech 700 Series

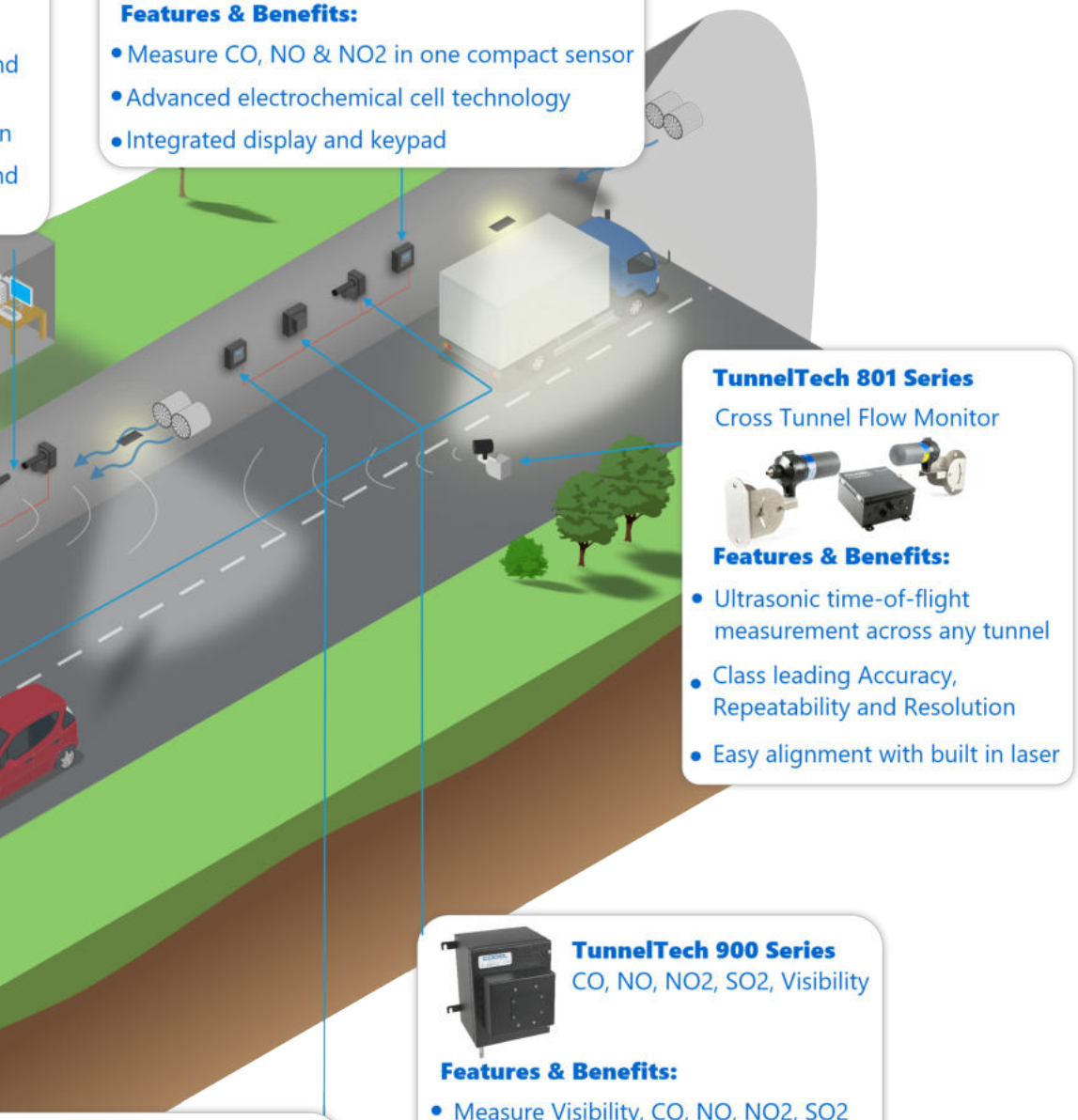
CO/NO/NO2/Vis Monitor

Features & Benefits:

- Measure CO, NO, NO2 & Visibility in one compact sensor
- Advanced electrochemical cell technology
- Integrated display and keypad

Features

- Single sp
- Compact ABS plas
- Easy insta required



TunnelTech 500 Series

Electrochemical CO, NO & NO2 Air Quality Monitor

Features & Benefits:

- Measure CO, NO & NO2 in one compact sensor
- Advanced electrochemical cell technology
- Integrated display and keypad

TunnelTech 801 Series

Cross Tunnel Flow Monitor

Features & Benefits:

- Ultrasonic time-of-flight measurement across any tunnel
- Class leading Accuracy, Repeatability and Resolution
- Easy alignment with built in laser

TunnelTech 900 Series

CO, NO, NO2, SO2, Visibility

Features & Benefits:

- Measure Visibility, CO, NO, NO2, SO2 in one compact sensor
- Heated measurement chamber
- Internal fan to draw sample through measurement chamber

TunnelTech 400 Series

CO, NO, NO2, SO2 Air Quality Monitor

& Benefits:

ecies gas analyser

and durable stainless steel or ic sensor

allation with minimal wiring

The importance of monitoring the luminance and illuminance is to prevent drivers' eyes becoming affected by the "black hole" effect and potentially becoming a hazard to other road users.

Product Variants

- TunnelTech 601 - Luminance
- TunnelTech 602 - Illuminance

The TunnelTech 601 Luminance photometer monitors the average luminance of a tunnel entrance and its surroundings. In accordance with Commission Internationale de l´Eclairage, (C.I.E.), publication 88, 1990 recommendations, the photometer monitors the average luminance within a 20-degree angle over a standard range of 0 - 6,500 cd/m2.

The detector is a metal/glass encased silicon diode photocell which is filtered to give a response that mimics the performance of the human eye. The detector is perfectly linear within its measuring range and has an instantaneous response to changing light levels.

- **Calibrated using standards traceable to UK National Physical Laboratory**
- **Accuracy +/-1%**
- **Measurement of tunnel entrance luminance**
- **Compliant with Commission Internationale de l´Eclairage, (C.I.E.), publication • 88, 1990**
- **Metal/glass encased Silicon photodiode, Vl filtered to human spectral response**

Measurement	Luminance
Measurement Units	Candela/metre squared - cd/m^2
Photodetector	Metal/glass encased silicon diode photocel
Measurement Range (Typical)	0 - 6,500 cd/m^2
Accuracy	+/- 1%
Ambient Temperature	-20°C to +50°C
Power Supply	220VAC or 24VDC
Construction	Corrosion resistant epoxy coated aluminium housing sealed to IP66
Analogue Outputs	1 x 4-20mA current outputs as standard
Calibration	Traceable to NPL Standard Luminant A
Wash/Wipe Kit (Optional)	Wiper unit, wash bottle

Uses the latest Electrochemical Cell Technology for the measurement of CO, NO and NO_2 with the addition of LED measured visibility.

Product Variants

- TunnelTech 701 - CO, NO, NO_2, Vis
- TunnelTech 702 - CO, NO, Vis
- TunnelTech 703 - CO, Vis
- TunnelTech 704 - NO, Vis
- TunnelTech 705 - NO_2, Vis
- TunnelTech 706 - CO, NO_2, Vis
- TunnelTech 707 - NO, NO_2, Vis
- TunnelTech 708 - Vis

The TunnelTech 700 Series analyser uses electrochemical cell technology to determine CO, NO & NO_2 concentrations and optical attenuation to monitor visibility levels.

As with all the electrochemical sensors from CODEL there are no moving parts, reliability levels are very high and maintenance requirements are low.

The sight tubes have been designed to ensure that airborne dust and contaminants do not reach the optical windows and cause drift.

- **Measure CO, NO, NO_2 & Visibility in one compact sensor**
- **Minimal maintenance requirements**
- **Advanced electrochemical cell technology**
- **Corrosion resistant epoxy coated aluminium housing (IP66), also available in 316 Stainless Steel**
- **Designed to withstand the harshest of tunnel environments**

Measurement	Single or multi-gas measurements available: CO, NO_2, NO & Visibility			
Measurement units	ppm for CO & NO, ppb for NO_2, m^{-1} or m Visibility			
Path Length	3m (6m folded beam)			
Calibration	Automatic zero calibration - manual span check			
	CO	**NO**	**NO_2**	**Visibility**
Measurement Technique	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell	LED Transmitivity
Measurement Range (typical)	0 - 300 ppm	0 - 30 ppm	0 - 5/10 ppm	0 - 0.015m^{-1}
Accuracy	± 2ppm	± 2ppm	± 100ppb	+/- 0.0002 m-1
Resolution	< 0.1 ppm	< 0.1 ppm	1 ppm	+/- 0.002m^{-1}
Response Time	< 1 Minute	< 1 Minute	< 1 Minute	10s - 2min Selectable
Detection Limit	< 2 ppm	< 2 ppm	10 ppb	
Zero Drift	< 1 ppm per month	< 1 ppm per month	< 0.05 ppm per month	
Measurement Drift	< 5% per year	< 5% per year	< 5% per year	
Ambient Conditions	-20°C to +55°C			
Power supply	24V DC			
Analogue Outputs	2 x 4-20mA current outputs as standard, fully configurable			
Relay Outputs	2 or 4 x volt-free SPCO contacts, fully configurable			
Construction	Epoxy Coated Die-Cast aluminium, stainless steel 316L brackets, sealed to IP66			

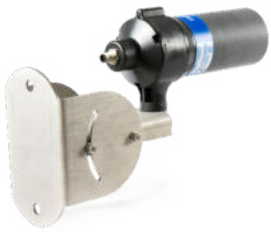
TunnelTech 801 air flow monitor that combines the reliability of ultrasonic technology and delivers superb accuracy and reliability.

Product Variants

- TunnelTech 801 - Cross-tunnel Flow Monitor

The TunnelTech 801 Air Flow Monitor is CODEL's industry proven cross-tunnel air flow monitor

The TunnelTech 801 has been specifically designed for road, rail and civil tunnel and ventilation shaft applications and represents the latest in compact ultrasonic sensor-head design. Ultrasonic time-of-flight measurement across any tunnel delivers a highly accurate airflow value and virtually eliminates traditional high-maintenance measurement techniques.



The TunnelTech 801 provides real-time accurate measurements of air velocity and volumetric airflow under demanding environmental conditions. Unlike other measurement devices, the sensor is not affected by temperature, humidity or dust.

- **Dual sensor, non-contact ultrasonic transit time measurement technology**
- **No moving components providing maintenance free operation**
- **Signal output by analogue/relay or RS 485 MODBUS**
- **Real-time accurate measurements of air velocity and volumetric airflow**
- **Extremely low maintenance requirements**

Measurement	Airflow velocity, Volumetric flow, Airflow direction, Temperature
Measurement Units	m/s and °C
Measurement Technique	Across the tunnel, dual sensor, ultrasonic transit time principle
Measurement Range (Typical)	-40 to +40 m/s, range is user configurable
Ambient Temperature	-40°C to +55°C
Accuracy	±0.1 m/sec
Resolution	0.01 m/s
Averaging Time	1 second to 8 minutes
Ambient Temperature Range	-40°C to +55°C
Junction Box (Optional)	Junction box to allow greater separation between measuring head & SPU
Power Supply	24 VDC Power Supply or Power Over Ethernet (POE)
Construction	Sensor Heads: Kynar 720 – IP69, Brackets: SS316L, Head Cables: Polyurethane – IP67, Signal Processor Unit: SS316L – IP66
Analogue Outputs	2 x 4-20 mA optically isolated output, 500Ω maximum load, Fully Configurable
Relay Output	2 x Form C SPDT relay, isolated

The TunnelTech 900 Series is an all-in-one air quality monitor based on Scattered Light measurement technology for Visibility and Electrochemical Cell technology for CO, NO, NO_2 & SO_2 gas measurements.

Product Variants

- TunnelTech 901 - Visibility, CO, NO, NO_2, SO_2
- TunnelTech 902 - Visibility, CO, NO_2, SO_2
- TunnelTech 903 - Visibility, NO, NO_2, SO_2
- TunnelTech 904 - Visibility, CO, NO, SO_2
- TunnelTech 905 - Visibility, CO, NO, NO_2
- TunnelTech 906 - Visibility, NO_2, SO_2
- TunnelTech 907 - Visibility, NO, SO_2
- TunnelTech 908 - Visibility, NO, NO_2
- TunnelTech 909 - Visibility, CO, SO_2
- TunnelTech 910 - Visibility, CO, NO_2
- TunnelTech 911 - Visibility, CO, NO
- TunnelTech 912 - Visibility
- TunnelTech 913 - Visibility, SO_2
- TunnelTech 914 - Visibility, NO_2
- TunnelTech 915 - Visibility, NO
- TunnelTech 916 - Visibility, CO

The TunnelTech 900 Series Air Quality Monitor is an essential part of any road or rail tunnel safety system. Firstly, it monitors the atmosphere within the tunnel and ensures that the tunnel ventilation system provides sufficient clean air to protect tunnel users' health and for drivers to clearly see the road ahead.

The TunnelTech 900 Series analyser electrochemical cell technology determines CO, NO, NO_2, and SO_2 concentrations, utilising backscatter technology for visibility measurements. Reliability levels are extremely high and maintenance requirements are very low.

- **No fog interference, due to built in heater**
- **Compact all-in-one Visibility & Gas monitor**
- **Advanced electrochemical cell technology**
- **Easy installation with minimal wiring required**
- **Includes internal fan to draw a constant sample**

Measurement	Single or multi-gas measurements available: CO, NO_2, SO_2 NO & Visibility				
Measurement units	m^{-1} for visibility, ppm for CO, NO, NO_2, SO_2 °C for Temperature				
Calibration	Factory calibrated - manual span check function				
	Visibility	**CO**	**NO**	**NO^2**	**SO^2**
Measurement Principal	Backscatter	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell	Electrochemical Cell
Nominal Measurement Range	0 to 0.015 m^{-1}	0 to 500 ppm	0 - 30ppm	0 to 20 ppm	0 to 50 ppm
Measurement Range (Typical)	0 to 0.015 m^{-1}	0 to 300 ppm	0 to 30 ppm	0 to 5 ppm	0 to 20 ppm
Detection Limit	0.0001 m^{-1}	0.5 ppm	0.5 ppm	0.1 ppm	0.5 ppm
Response Time	30 seconds	30 seconds	30 seconds	30 seconds	30 seconds
Zero Drift	<+/- 0.001 m^{-1}	<+/- 100 ppb	<+/- 50 ppb	<+/- 20 ppb	<+/- 20 ppb
Measurement Drift	< 10% Per Year	< 10% Per Year	< 20% Per Year	< 20% Per Year	< 15% Per Year
Accuracy	0.0001 m^{-1}	0.5 ppm	0.5 ppm	0.1 ppm	0.5 ppm
Ambient Conditions	-20°C to +60°C				
Power supply	24V DC				
Construction	Stainless Steel 316L, Designed to IP69K				
Analogue Output	Up to 8 x 4-20mA current outputs as standard, fully configurable				
Relay Output	Upto 8 x volt-free SPCO contacts, fully configurable				

Sensor Head	CO	NO	NO_2	SO_2	Open Path Vis	Scattered Light Vis	Temp	Air Flow	Light
TunnelTech 101 - LED					✓		✓		
TunnelTech 102 - LED					✓		✓		
TunnelTech 201 - Infrared & LED	✓	✓			✓				
TunnelTech 202 - Infrared & LED	✓				✓				
TunnelTech 203 - Infrared & LED	✓	✓							
TunnelTech 204 - Infrared & LED					✓				
TunnelTech 305 - Ultrasonic							✓	✓	
TunnelTech 401 - EC Cell	✓								
TunnelTech 402 - EC Cell		✓							
TunnelTech 403 - EC Cell			✓						
TunnelTech 404 - EC Cell				✓					
TunnelTech 501 - EC Cell	✓	✓	✓						
TunnelTech 502 - EC Cell	✓	✓							
TunnelTech 503 - EC Cell	✓								
TunnelTech 504 - EC Cell		✓							
TunnelTech 505 - EC Cell			✓						
TunnelTech 506 - EC Cell	✓		✓						
TunnelTech 507 - EC Cell		✓	✓						
TunnelTech 601 - Luminance									✓
TunnelTech 602 - Illuminance									✓
TunnelTech 701 - EC Cell & LED	✓	✓	✓		✓				
TunnelTech 702 - EC Cell & LED	✓	✓			✓				

Sensor Head	CO	NO	NO_2	SO_2	Open Path Vis	Scattered Light Vis	Temp	Air Flow	Light
TunnelTech 703 - EC Cell & LED	✓				✓				
TunnelTech 704 - EC Cell & LED		✓			✓				
TunnelTech 705 - EC Cell & LED			✓		✓				
TunnelTech 706 - EC Cell & LED	✓		✓		✓				
TunnelTech 707 - EC Cell & LED		✓	✓		✓				
TunnelTech 708 - LED					✓				
TunnelTech 801 - Ultrasonic							✓	✓	
TunnelTech 901 - Scattered light	✓	✓	✓	✓		✓	✓		
TunnelTech 902 - Scattered light	✓		✓	✓		✓	✓		
TunnelTech 903 - Scattered light		✓	✓	✓		✓	✓		
TunnelTech 904 - Scattered light	✓	✓		✓		✓	✓		
TunnelTech 905 - Scattered light	✓	✓	✓			✓	✓		
TunnelTech 906 - Scattered light			✓	✓		✓	✓		
TunnelTech 907 - Scattered light		✓		✓		✓	✓		
TunnelTech 908 - Scattered light		✓	✓			✓	✓		
TunnelTech 909 - Scattered light	✓		✓			✓	✓		
TunnelTech 910 - Scattered light	✓		✓			✓	✓		
TunnelTech 911 - Scattered light	✓	✓				✓	✓		
TunnelTech 912 - Scattered light						✓	✓		
TunnelTech 913 - Scattered light				✓		✓	✓		
TunnelTech 914 - Scattered light			✓			✓	✓		
TunnelTech 915 - Scattered light		✓				✓	✓		
TunnelTech 916 - Scattered light	✓					✓	✓		

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